## ANALYSIS OF BISMUTH CONTENT IN A PEPTO-BISMOL TABLETS USING X-RAY FLUORESCENCE SPECTROSCOPY (XRF)

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## ABSTRACT

X-ray fluorescence spectroscopy (XRF) was used for the determination of bismuth content in a Pepto-Bismol brand antacid tablet. Three unknowns tablet obtained from the internet purported to be Pepto-Bismol tablet were investigated for bismuth content and the unknown tablet 2 was found to be a counterfeit product due to the absence of bismuth in its spectra during the investigation, in comparison to the official Pepto-Bismol tablet. Standard addition method and external calibration method were utilised for the determination of the amount of bismuth in the official Pepto-Bismol tablet and the mass was found to be 272.46 mg in comparison to the 262.50 mg provided on the box by the manufacturer while 236.46 was found in comparison to the 262.50 using external calibration. XRF technique utilised during this investigation shows many advantages such as high sensitivity, high detection limit, simple preparation method, and excellent reproducibility.

Keywords: XRF, bismuth, counterfeit.